

# HYDROSTATIC SIDE MOUNT TANK LEVEL SENDER

Part Number: 4272-1, 4272-2, 4272-3

## INSTALLATION AND OPERATING INSTRUCTIONS

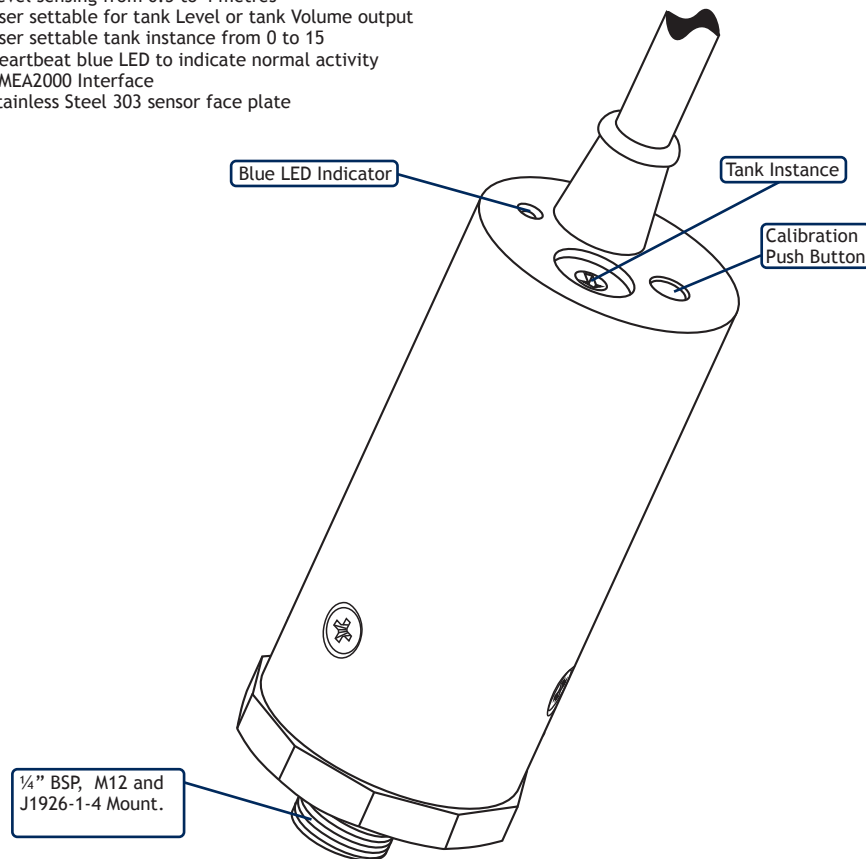


The Offshore Systems 4272 NMEA2000 Hydrostatic Side Mount Tank Level Sender measures the level of a Fuel tank.

It is very important that it is installed and set up correctly according to this manual. Please read and follow the installation and setup instructions carefully to achieve the best results.

The 4272 NMEA2000 Hydrostatic Side Mount Tank Level Sender has the following features:

- Level sensing from 0.5 to 4 metres
- User settable for tank Level or tank Volume output
- User settable tank instance from 0 to 15
- Heartbeat blue LED to indicate normal activity
- NMEA2000 Interface
- Stainless Steel 303 sensor face plate



## FIRMWARE REVISION

The information in this manual corresponds to firmware revision v1.0

## 1 INSTALLATION

You will find the following items in the 4272 package:

- 1 x 4272 NMEA2000 Hydrostatic Side Mount Tank Level Sender
- 1 x 4272 User Manual (This document)

### 1.1 MOUNTING LOCATION AND REQUIREMENTS

Requirements:

- Silicone grease
- 34mm spanner or adjustable spanner
- PTFE Tape

This unit must be mounted in an area protected from water and physical damage.

It is available as a number of thread fittings, such as 1/4" BSP, M12 and J1926-1-4.

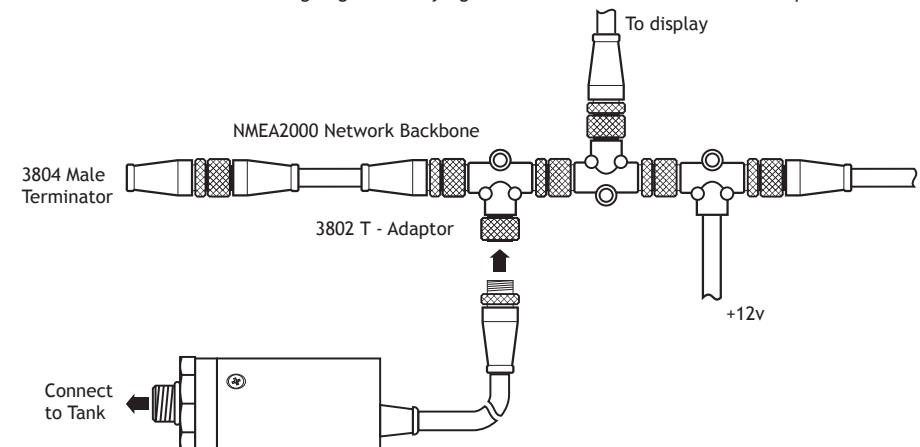
The sender is designed to be mounted in the side, at the bottom of the fuel tank into a threaded fitting. The tank must have this fitting installed.

- Apply silicone grease to the o-ring.
- Apply PTFE tape to thread on end of sensor body.
- Insert the sensor by hand, being careful not to cross-thread.
- Make sure the area around o-ring is clean
- Hand tighten and then use spanner to further tighten 1/2 turn.

### 1.2 CONNECTING THE NMEA2000 INTERFACE

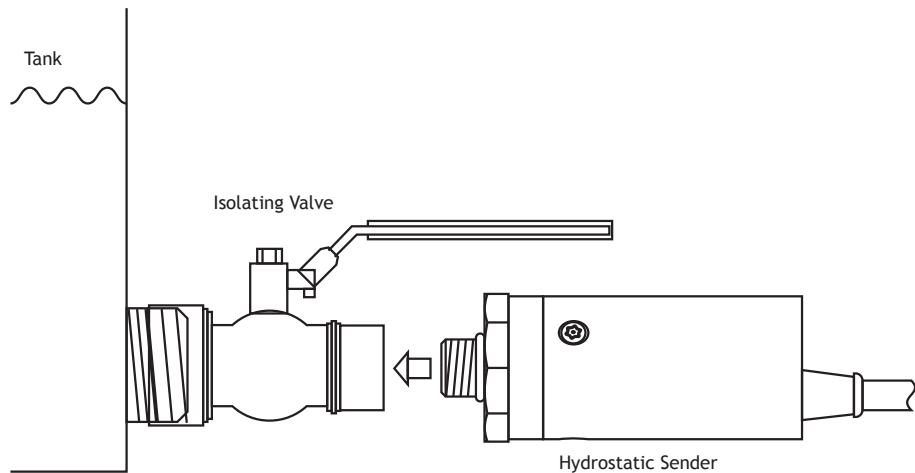
The unit must be connected to the NMEA2000 bus with POWER OFF to prevent damage.

The NMEA2000 interface cable on the unit should be connected to a nearby NMEA2000 Tee connector (part number 3802). The male end of the cable should be inserted into the female Tee connection noting the position of the keyway in the plug and the socket. This cable can be extended up to a maximum length of 6 metres to the Tee connector. Ensure that the locking ring is securely tightened so that the connection is waterproof and secure.



### 1.3 SUGGESTED MOUNTING METHOD

It is highly recommended that the Tank and Hydrostatic Sender is separated by an isolating valve.



## 2

## CONFIGURATION

### 2.2 TANK DEVICE INSTANCE

NMEA2000 requires a unique Device Instance to be set for each type of 4272 NMEA2000 Hydrostatic Side Mount Tank Level Sender on a single network. This is settable from device instance 0 to Device Instance 15 using the small rotary switch on the top of the sender.

This can be set at any time regardless if power is on or off. The switch counts from 0 - 9 then A - F being equivalent to Device Instance 0 - 15. The NMEA2000 Device Instance is set by using the small rotary switch on the front panel labeled "Tank No." as per the following table:

Switch Position	Device Instance
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
A	10
B	11
C	12
D	13
E	14
F	15

### 2.2 OUTPUT MODE CONFIGURATION

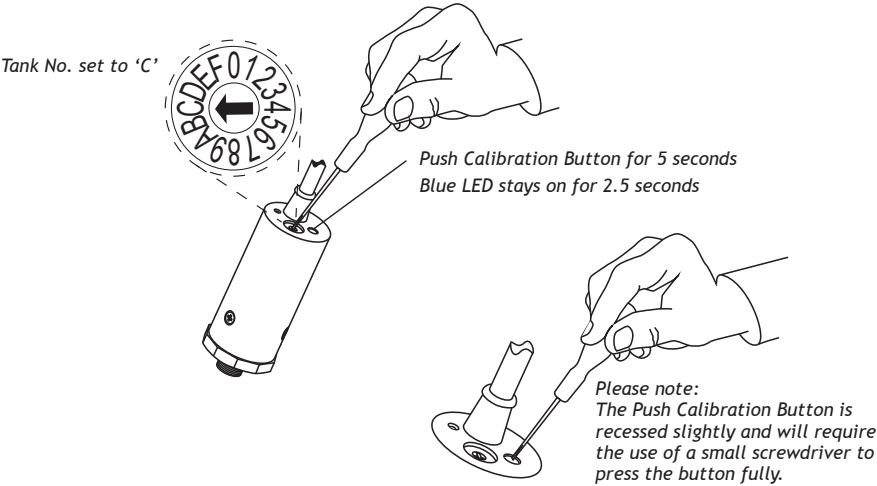
The 4272 Hydrostatic Side Mount Tank Level Sender has two output modes to choose from.

It has a normal tank LEVEL output from 0 - 100% that indicates the exact LEVEL of the fluid in the tank. The user can tell when the unit is in Level Mode because the blue LED flashes ONCE every 2.5 seconds when a level message has been sent.

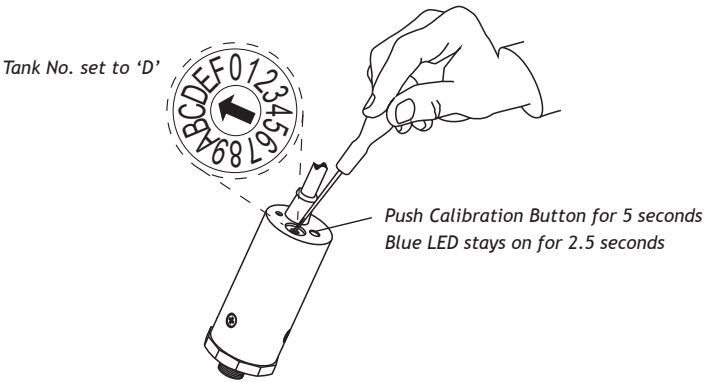
In addition to this mode the unit can transmit a tank VOLUME output from 0-100% that reflects the actual fluid volume within the tank taking allowance for the tanks internal shape. The user can tell when the unit is in Volume Mode because the blue LED flashes twice rapidly every 2.5 seconds when a volume message has been sent.

The Volume Mode PGN message is exactly the same as the Level Mode PGN message which means that the volume can easily be shown on any NMEA2000 display that accepts Fluid Level PGNs from tank senders. The Volume Mode Tank data can be entered from any Offshore Systems Display that is equipped to set up this data (e.g. 3340 and 3350). Please contact us for more information on these displays. It can also be set up at manufacture if the information is made available at the time of ordering.

Level Mode can be set by setting the “Tank No.” switch to “C” and then pressing the Calibration Push Button for at least 5 seconds. The blue LED will turn on and stay on for 2.5 seconds to indicate that the unit has been configured. Then return the “Tank No.” switch to its original position and the sender will transmit Level messages as indicated by the blue LED flashing ONCE briefly every 2.5 seconds.



Volume Mode can be set by setting the “Tank No.” switch to “D”, then pressing the Calibration Push Button for at least 5 seconds. The blue LED will turn on and stay on for 2.5 seconds to indicate that the unit has been configured. When the switch is returned to its original position the sender will transmit Volume messages as indicated by the blue LED flashing rapidly TWICE every 2.5 seconds.



If the sender’s Volume Mode Tank Data has NOT been set up and the unit is accidentally set to Volume Mode then the data transmitted will actually be the Level Data so the unit remains fully functional.

2.3 DAMPING LEVEL CONFIGURATION

The 4272 Hydrostatic Side Mount Tank Level Sender achieves damping by averaging tank level values measured over a set period of time. This period of time can be configured to be 5, 10, 15, 20 or 25 seconds. By default the damping is set to 15 seconds.

Damping Level can be changed by setting the “Tank No.” switch to a value corresponding to the desired level (see table below) and then pressing the Calibration Push Button for at least 5 seconds. The blue LED will turn on and stay on for 2.5 seconds to indicate that the unit has been configured. Finally, return the “Tank No.” switch to its original position.

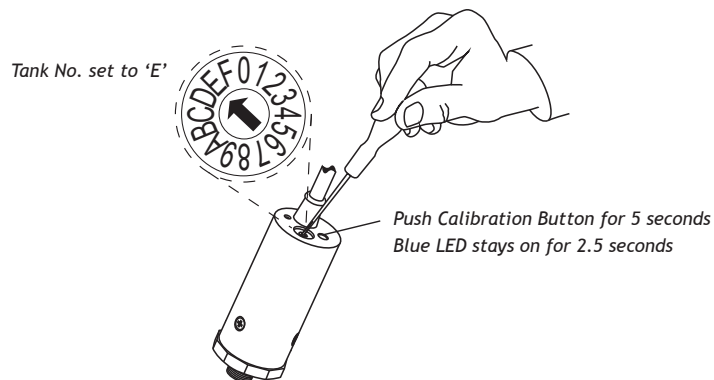
Switch Position	Damping Level (seconds)
7	5
8	10
9	15
A	20
B	25

### 3 CALIBRATION

When the unit is first installed it needs to be calibrated to the tank. This is easily done as follows:

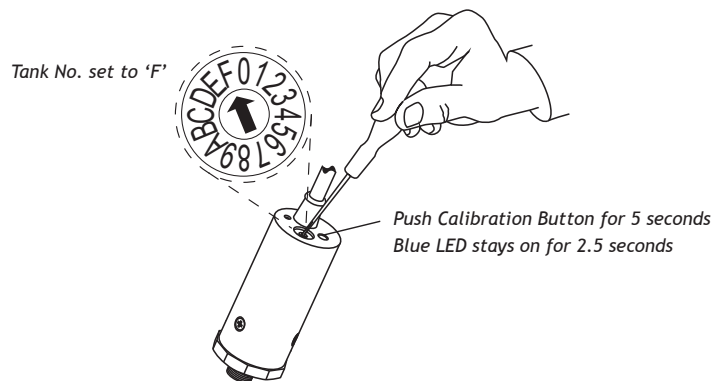
#### 3.1 TANK EMPTY CALIBRATION

When the unit is first installed in an EMPTY tank and powered on, the Tank Empty Calibration is done by setting the "Tank No." switch to "E", then pressing the Calibration Push Button for at least 5 seconds. The blue LED will turn on and stay on for 2.5 seconds to indicate that the empty calibration is complete.



#### 3.2 TANK FULL CALIBRATION

This is easily done in a FULL tank and powered on by setting the "Tank No." switch to "F", then pressing the Calibration Push Button for at least 5 seconds. The blue LED will turn on and stay on for 2.5 seconds to indicate that the fixed full calibration point has been set.



In all cases do not forget to set the "Tank No." switch back to its original tank number.

### 4 TROUBLESHOOTING

The following table will help diagnose common faults:

LED does not flash	Check power on network
LED flashes rapidly	Network not terminated correctly or no other NMEA2000 device on the network
LED flashes once every 2.5 seconds	Normal Operation in Level mode (see 2.2 above)
LED Flashes twice every 2.5 seconds	Normal Operation in Volume mode (see 2.2 above)
LED on for about 2.5 seconds	Configuration or calibration has been successful

#### MAINTENANCE

Ensure that the sender is mounted securely to the tank and that there are no liquid leaks. Reseat and tighten if necessary. Check the security of the NMEA2000 cable to the NMEA2000 Tee Connector and tighten if necessary. Clean the unit with a damp soft cloth. Do not use chemical cleaners as they may remove label markings.

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# HYDROSTATIC SIDE MOUNT TANK LEVEL SENDER

Part Number: 4282

## INSTALLATION AND OPERATING INSTRUCTIONS

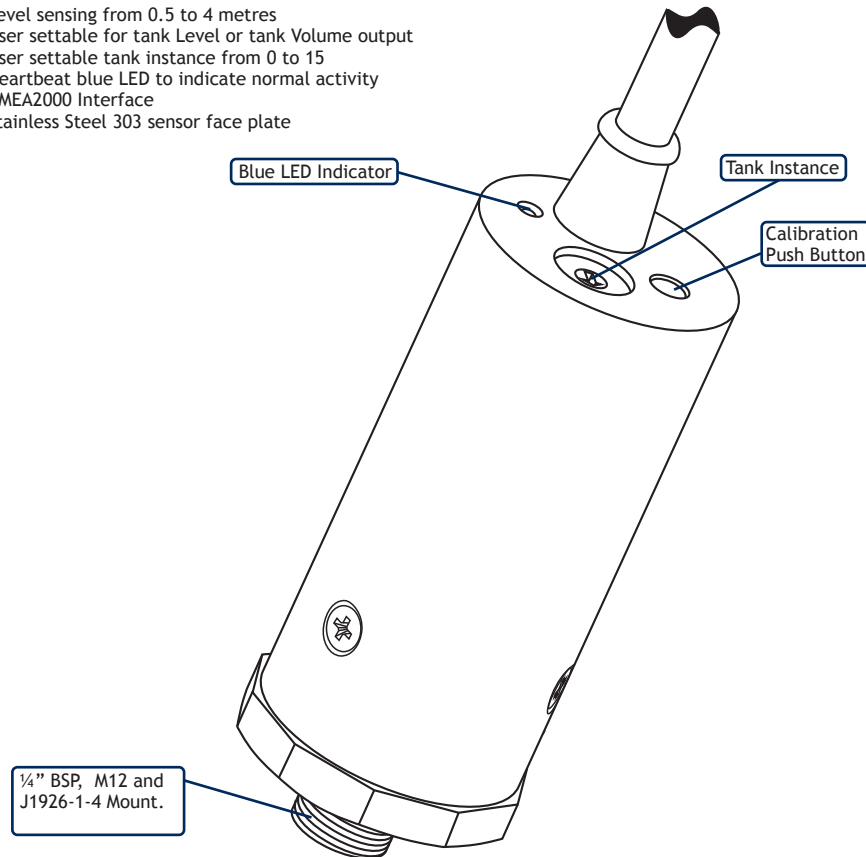


The Offshore Systems 4282 NMEA2000 Hydrostatic Side Mount Tank Level Sender measures the level of a Water tank.

It is very important that it is installed and set up correctly according to this manual. Please read and follow the installation and setup instructions carefully to achieve the best results.

The 4282 NMEA2000 Hydrostatic Side Mount Tank Level Sender has the following features:

- Level sensing from 0.5 to 4 metres
- User settable for tank Level or tank Volume output
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Requirements:

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It is available as a number of thread fittings, such as 1/4" BSP, M12 and J1926-1-4.

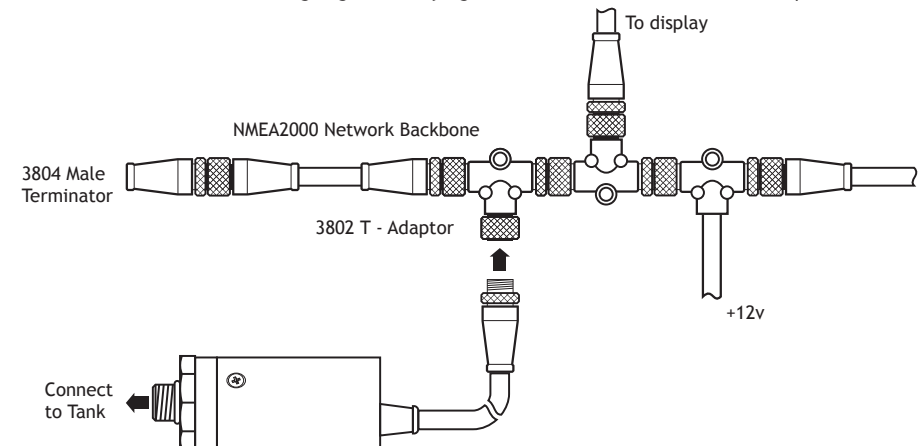
The sender is designed to be mounted in the side, at the bottom of the water tank into a threaded fitting. The tank must have this fitting installed.

- Apply silicone grease to the o-ring.
- Apply PTFE tape to thread on end of sensor body.
- Insert the sensor by hand, being careful not to cross-thread.
- Make sure the area around o-ring is clean
- Hand tighten and then use spanner to further tighten 1/2 turn.

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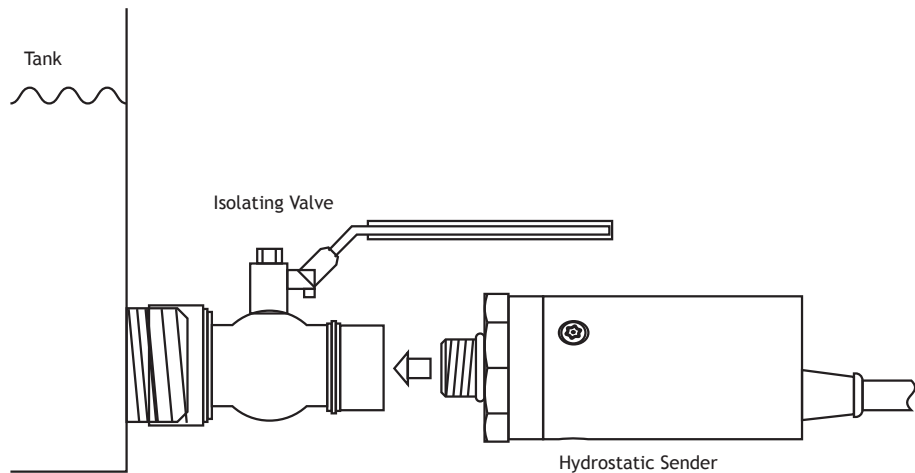
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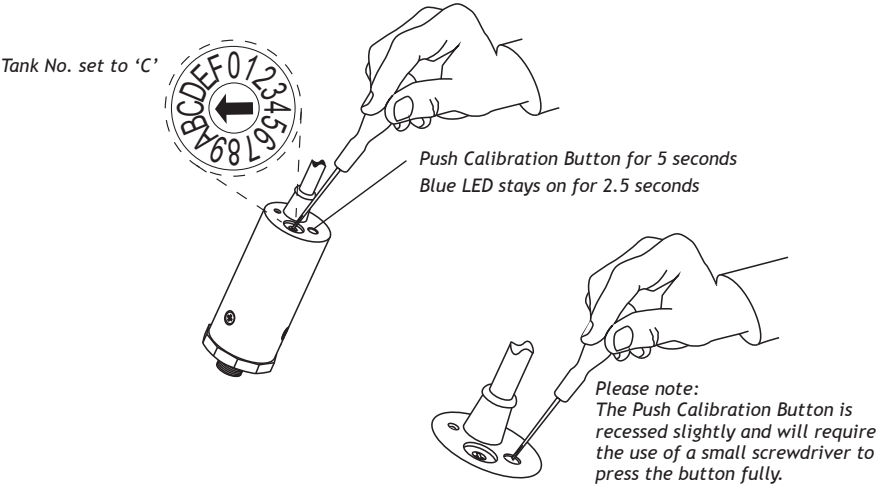
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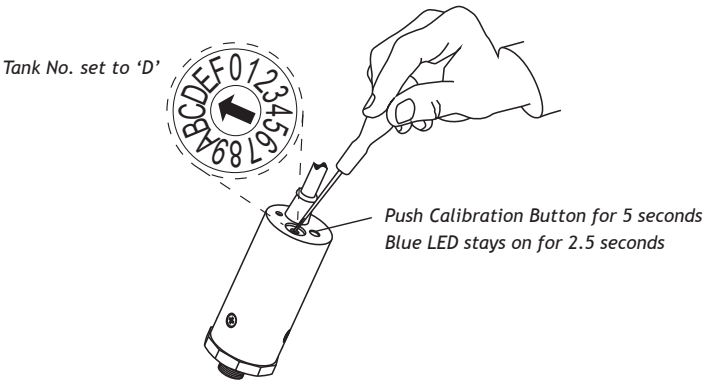
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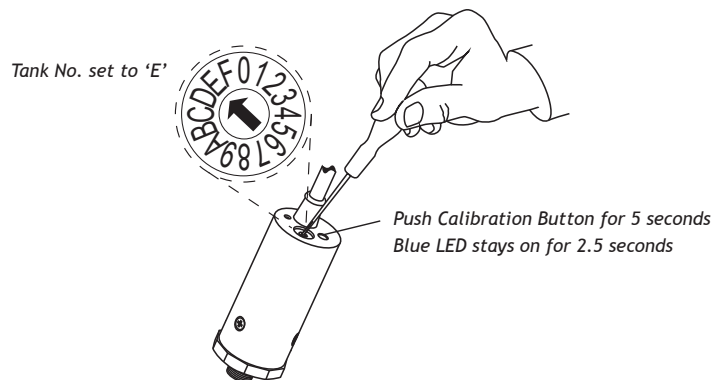
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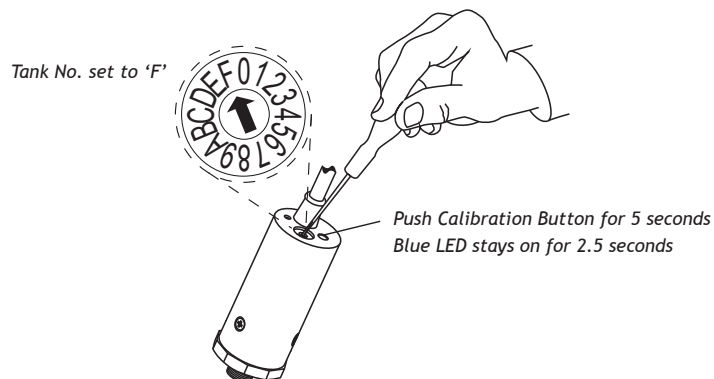
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